



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,020	06/15/2005	Jun Yamamoto	Q88367	7381
23373 7590 12/31/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER VADEN, KENNETH I				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
12/31/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

Office Action Summary

Application No.

10/539,020

Applicant(s)

YAMAMOTO, JUN

Examiner

KENNETH VADEN

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

The nonstatutory double patenting rejection of claims 1 and 9 still stands. No terminal disclaimer has been received. In the remarks presented the Applicant refers to the significance of the third step. However referring to the comparative data in the specification it is not clear whether the difference is significant. The evidence shown in Table 1 is not commensurate in scope with the claim. It only shows data for toluene at 80 °C for 1 hour and 40 minutes vs. N₂ at 110 °C for 8 hours. In col. 4 of the "147" reference, after mixing the catalyst with the solvent for extraction Yamamoto teaches washing with the solvent for washing and this precedes the silylation step. According to column 7, the solvent for washing can be toluene. This suggests washing with toluene before the silylation that meets the claimed third step of solvent substitution with solvent inert to the silylation agent. Regarding Example 1 and Comparative example 1 it is not clear if a significant difference results in the use of toluene vs. nitrogen from the extraction to silylation. The 35 U.S.C. paragraph 103(a) rejection also stands.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims

are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6323147. Although the conflicting claims are not identical, they are not patentably distinct from each other because the catalyst obtained by the process according to claim 1 is encompassed by the catalyst as claimed in claim 1 of U.S. Patent Number 6323147.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6323147).

Regarding claim 1, Yamamoto "147" teaches the process for producing a titanium containing silicon oxide catalyst (Col. 8, lines 31-60) with an average pore diameter for the catalyst material of 10 Å or more, a pore size of 90% or more of the total pore volume of 5 to 200 Å, a specific pore size of 90% or more, a specific pore volume of 0.2 cm³/g or more and a quaternary ammonia ion represented by the formula: [NR₁R₂R₃R₄]⁺ where R₁ represents a linear or branched hydrocarbon chain having 10 to 36 carbon atoms, and R₂ and R₄ represent an alkyl group having 1 to 6 carbon atoms.

Regarding the first step of claim 1, Yamamoto "147" teaches obtaining a solid containing a catalyst component and a template by mixing and stirring a silica source, a titanium source and a quaternary ammonia ion as a template in a liquid state (Col 8, lines 64 –67 and Col. 9, lines 1-2).

Regarding step two of claim 1, the component (solid) is removed from the template using a solvent extraction using a solvent to remove the template (Col. 4, lines 4-19).

Regarding step three of claim 1, Yamamoto "147" also teaches that after he catalyst is mixed with solvent for solvent extraction and the liquid portion separated, the catalyst can be obtained by extracting the catalyst layer with a solvent for washing (col. 4, lines 40-44) and teaches that a solvent used for washing is toluene (col. 7, line 50). Thus if toluene is used for washing after solvent extraction, this obviously results in a third step of substituting the solvent used for the extraction with a solvent which is substantially inert to a silylating agent used in a subsequent step, as claimed.

Regarding step four, Yamamoto "147" teaches heating the mixture for one hour under reflux with stirring and removing the liquid, which corresponds to the step of obtaining a silylated catalyst by subjecting the solid to the procedure of step three.(Col 7, lines 47-48).

Regarding claim 2, Yamamoto "147" further teaches washing with toluene which is the same solvent as used in step four of silylation (Col. 7, line 49).

Regarding claim 3, Yamamoto "147" teaches the use of a template which a quaternary ammonium ion of the general formula $[NR_1R_2R_3R_4]^+$, where R_1 is a linear to branched hydrocarbon chain having 10 to 36 carbon atoms, and R_2 and R_4 represent an alkyl group having 1 to 6 carbon atoms (Col. 10, lines 1-7).

Regarding claim 4, Yamamoto "147" teaches the process of molding the solid containing the catalyst component (Col. 7, lines 45-52).

Regarding claim 5 and 6, Yamamoto "147" teaches the use of an alcohol for extraction. (Col. 7, lines 39-43). One of the preferred alcohols for this purpose is methanol (Col. 3, line 33-37).

Regarding claims 7 and 8, Yamamoto "147" teaches the use of a hydrocarbon such as toluene for substitution (Col. 7, lines 30-55).

Regarding claim 9, Yamamoto "147" teaches obtaining of a titanium-containing silicon oxide catalyst (Col. 7, lines 42-63).

Regarding claim 10, Yamamoto "147" teaches production of an oxirane compound resulting from the reaction of an olefin compound with an organic hydroperoxide in the presence of the catalyst (Col. 6, lines 1-3).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH VADEN whose telephone number is (571)270-5824. The examiner can normally be reached on M-Th 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on (571)272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kenneth Vaden
December 14, 2009

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793